

SPECIFICATION

GLASS CONTAINER FORMING MACHINE

The present invention relates to an I.S. 5 (individual section) type of glass container forming machine and more particularly to the takeout mechanism for that machine.

BACKGROUND OF THE INVENTION

In an I.S. machine, a bottle is formed in a two 10 part blow mold and when it has been sufficiently cooled so that it can be moved, the blow mold parts open and a takeout mechanism grabs the bottle proximate the finish, lifts the bottle and carries it to a position suspended above a deadplate which is 15 perforated to allow cooling air to blow upwardly against the entire bottom of the bottle, continuing the cooling process. When the bottom of the bottle has been sufficiently cooled the takeout mechanism releases the bottle dropping the bottle the distance 20 it was held above the deadplate, onto the deadplate.

OBJECT OF THE INVENTION

It is accordingly an object of the present invention to provide an improved takeout mechanism.

Other objects and advantages of the present 25 invention will become apparent from the following portion of this specification and from the accompanying drawings which illustrate in accordance with the mandate of the patent statutes a presently preferred embodiment incorporating the principles of 30 the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an oblique schematic showing of a takeout mechanism;

Figure 2 is a side view showing the 35 displacement of the takeout from the bottle pickup position to the bottle deposit position; and

Figure 3 is a logic diagram illustrating the operation of the control for this takeout displacement.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

5       Figure 1 illustrates a takeout mechanism 10 which is mounted on the section frame 12 of an I.S. machine proximate the blow station 14 where a parison (not shown), located within a pair of closed blow molds (also not shown), is blown into a bottle  
10      16.    U.S. Patent No. 5,895,513, illustrates a conventional takeout mechanism. The takeout mechanism includes a tong arm 18 which supports a tong head 20 for each bottle produced at the blow station. In the illustration three bottles are held  
15      in three tong heads and the I.S. machine is accordingly operating triple gob.

As shown in figure 2, When the bottles have been sufficiently cooled, the blow molds will be opened so that each formed bottle sits on the bottom plate of the mold (schematically shown as line 22).

20      The takeout is displaced over the formed bottles so that the tongheads can grip the bottles proximate the finish (the threaded, etc. top). The takeout control (figure 3) will then Displace The Gripped  
25      Bottle To H1 26 (a selected distance above a deadplate 24 which is selected to cool the bottom of the bottle as desired). Cooling air flows upwardly through holes in the deadplate to cool the bottom of the suspended bottles. When the bottoms have been  
30      sufficiently cooled (the query "Has Bottle Been Held At H1 For Time T" 28 is answered in the affirmative), the control will Lower Bottle To H2 30 (H2 is a distance above a deadplate 24 which is selected to be at or very close to the deadplate).  
35      When the control answers the query "Has Bottle Been Lowered To H2" 32 in the affirmative, the control

will Release The Bottle Onto The Deadplate 34. As shown the control has inputs for H1, H2 and time T so that an operator can define the displacement for the particular bottle being produced.

5 As illustrated in figure 2, the takeout mechanism has vertical and horizontal displacement in a two axis mechanism with each mechanism controlled by a servomotor 40,42. Alternately the tong arm could be pivotally mounted and driven  
10 through an arc by a single servomotor.